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SUPPLEMENT TO REPORT NO. 50X1

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1.

2. Introduction:

- a. KhETI originated from the electrical faculty of the Kharkov Technological Institute. The Kharkov Technological Institute was a fine old engineering school which was founded some 50 years before World War I. In 1923, when Lenin called for the "electrification of the country", the electrotechnical faculty began its struggle for independent existence. It was easy to accomplish this in those days because the Ukrainian Government was then located in Kharkov. At that time Kharkov was a comparatively small city and the members of the Ukrainian Government were personally acquainted with most of the faculty members of the Kharkov Technological Institute. Government offices in the USSR were then also more accessible than they are now.
- b. In view of the above and Lenin's proclamation, the Ukrainian Government approved the plan to establish the Kharkov Electrotechnical Institute (KhETI) and provided the necessary grounds (location item No. 37 in [redacted] which formerly belonged to the Kharkov Technological Institute. In approximately 1926 a large luxurious building was constructed to house HETI as well as other buildings to quarter its teaching staff. Within the next few years the Ukrainian Government was transferred to Kiev and many changes took place at HETI. Some of its founders were transferred to Kiev, some fired and others moved to other institutes and schools such as Kharkovskiy Elektrotekhnikum which trained technicians.

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3. Faculty Qualifications:

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a.

b. Only the professors of theoretical and general technical subjects, which were taught during the first three years at KhETI, were well qualified, but even among them, there were young engineers who had had only two or three years of teaching experience. Thus, [redacted] teaching fourth year courses and guiding the students throughout the fifth year of thesis writing and research.

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c. In 1937 the Soviet Government issued a law requiring all professors to obtain "Doctors degrees" and assistant professors "Candidates degrees" (Bachelor of Science). Prior to that time, scientific degrees did not exist in the USSR. The assistants were collected from the best recently graduated students and were not permanent.

4. Educational Level of Students:

a. Prior to 1935, when GU-VTUZ (Glavnoye Upravleniye - Vussheye Tekhnicheskoye Uchebnoye Zavedeniye, Central Board of Administration - Highest Technical Teaching Institution) was established, the students entering KhETI were very poorly prepared for their work at the institute. Middle schools during that period had no texts and therefore the students graduating from them were only as good as their teachers had been. Another important factor was that all fairy tales were banned and destroyed in the USSR. [redacted] this had a very adverse effect on the development of the children's minds. They completely lacked any imagination and therefore were not prepared to enter the field of engineering. They could only grasp material matters and lacked the ability to solve theoretical problems. In 1932 the Soviet Government realizing its mistake, reversed its decision and encouraged the printing of stories and fairy tales. New texts were at that time also made available to all middle schools. These two factors greatly improved the calibre of students who entered HETI in the following years.

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b. All graduates of middle schools, prior to 1935, were required to work for two years before they could enroll in an institute, or any other institution of higher learning. This period was called Proisvodstveniy Stazh (creative experience). Graduates of institutes were also required to satisfactorily complete two years of service in their field before they were issued a diploma. This practice was also a major contributor, prior to 1935, to the unpreparedness of the students who entered KhETI to successfully complete the training offered by that institute.

c. Furthermore, during that period most students were selected and enrolled at KhETI not because of their qualifications or inclinations, but because they came from the peasant or laboring class, or had a Party affiliation. During that period, the expression "Po Bukve Z" (Znakomstvo - By the letter Z, literal, i.e. through friendship) became very popular, i.e. this answer was given to questions such as how an individual ever managed to gain enrollment in an institute, be appointed to a high position and the like. Because of this method of selecting students and the other previously mentioned factors contributing to the unpreparedness of the students, it became necessary for KhETI to establish the Rabfak (Rabochiy Fakul'tet - Workers' Faculty).

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- d. Rabfak attempted to prepare the unqualified students for their course at KhETI by teaching them such basic subjects as grammar, mathematics, physics, chemistry, etc. These students remained under the Rabfak for as long as it took them to satisfactorily prepare themselves for the KhETI program. It was later learned that those students, whose backgrounds and educational levels required this additional training, never turned out too well and were called *Uskiye Spetsyalisti* (Limited Specialists). Their minds just did not function along scientific lines, but they did make excellent technicians. The *Uskiye Spetsyalisti* upon graduation from KhETI were not assigned to engineering positions but were utilized as technicians in factories.
- e. The practice of *Prorabotka* (the solving of a problem) also flourished during this period. It was one where a group of Party members would "work over", through public attack, ridicule and discipline, a political deviationist or a student who fell behind in his studies. This practice took up a great deal of the students' time during class breaks, lunch periods and after school hours. There also existed constructive groups known as *Udarniye Brigadi* (Shock Brigades - exemplary), whose aims were to help poor students in their studies and study habits. Those who failed the midyear examination in December of each year were called *Hvosti* (tails). The *Udarniki* (the individuals in this group) tried to cut off the tails, i.e. help the stragglers.
- f. After the establishment of GU-VTUZ in 1935, the scholastic requirements were raised at KhETI and entrance examinations were given to all prospective students. The professors were instructed not only to be more demanding of their students in technical subjects but to also insist that their students use grammatical Russian in their oral and written work. They were instructed to correct students on their use of grammar and if no improvement resulted, to report the student to the administration of KhETI which in turn then required that the student take a special additional course in grammar. Furthermore, many social academic courses, which previously took up much of the students' time, were then eliminated and more technical subjects added to the curriculum.
- g. Some of the subjects that KhETI stopped teaching in 1935 were *Istmat* (Istoricheskiy Materializm - Historical Materialism), *Sotsek* (Sotsial'naya Ekonomika - Social Economics), *Politgramota* (Politicheskaya Gramota - Political Reading and Writing), *NOT* (Nauchnaya Organizatsiya Truda - Scientific Organization of Labor) and Physical Culture. *NOT* was dropped because it was felt that since Soviet industries were not highly enough developed to use mass production methods utilized in the US and other countries, there was no point in teaching the students this course. The only two nontechnical subjects that were not eliminated from the KhETI curriculum were *Voyennaya Muzhtrovka* (Military Training or drill) and the History of the VKP (Vsesoyuznaya Kommunisticheskaya Partiya - All-Union Communist Party).

5. Organization:

- a. All technical institutes which had authority to graduate engineers were called VTUZ. Narkompros (Narodnyy Komissariat Prosvescheniya - National Commissariat of Education) in Moscow had a department called GU-VTUZ. KhETI was directly under the jurisdiction of this department. The director of KhETI, who was a Party member, was responsible for the internal life of that institution. He was, however, restricted in three ways:
- (1) Every change in the program at KhETI had to be first approved by GU-VTUZ.
 - (2) All of the teaching staff, assistants, assistant professors, professors and heads of each *kafedra* (department), were appointed and licensed by GU-VTUZ.
 - (3) He was responsible to the local *Partycheyka* (Party Committee) for all internal activities at KhETI.
- b. KhETI had two administrative offices:

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- (1) Kontselyariya Po Studencheskim Delam (Student Affairs Office)
 - (2) Kontselyariya i Bukhalteriya Instituta (Administrative Office and Bookkeeping Department)
- c. As a separate unit was the Fundamental'naya Biblioteka (Fundamental Library). In this library students could read the technical and scientific books and magazines, but only the teachers were permitted to check them out. This library was well stocked with books and magazines of recent issue not only from the USSR but also from Germany, France, the UK and the US.
- d. KhETI offered courses both in the daytime and in the evenings. The maximum capacity of the Dnevniy Otdel (Day School) was 500 students and it functioned from 9:00 am to 4:00 pm. It was generally attended by younger, nonworking students. The maximum capacity of the Vecherniy Otdel (Night School) and classes were held from 5:00 pm to 10:00 pm. The students attending night school were all older working people with families. The teachers and courses at the night school were almost identical to those of day school with the exception that the day school graduated their students in five years, whereas night school students were required to attend the institute for a total of six years. The night school students had to transfer to day school in their sixth year and were paid for doing this at the rate of 30% of their working wages. It was very difficult to get into either the day or night division of KhETI. There were usually twice as many applicants for enrollment as there were openings.
- e. In 1941 KhETI was divided into six departments [see Enclosure (A) structural sketch]. Every department had a head (a senior professor), one or two professors, one or two assistant professors and five to eight young assistants (two for every professor and assistant professor). The names of some of the heads of the departments, as of 1941, are indicated on Enclosure (A). 50X1
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- f. The Department of Electromotor Drive (Kafedra Elektroprivodov), which was headed by professor Aronov (Doctoral dissertation in 1938), had two professors: Feinberg (Doctoral dissertation in 1939) and Vladimir Ilinski (Doctoral dissertation in 1940); two assistant professors (without Doctoral dissertations): Nikolaichuk and Bukhshtab and eight assistants.
- g. The head of a department was responsible for all activities within his department and held meetings once or twice a month where current scientific and teaching problems were discussed. He also lectured from 20 to 25 hours per week at the rate of 16 rubles per hour, carried on all the administrative functions of the department and guided the scientific work of two assistants. Professors lectured from 10 to 15 hours each week at the rate of 12 rubles per hour, guided eight to ten students through their fifth year of thesis writing and were responsible for the work of two assistants. Assistant professors only lectured 35 to 40 hours at the rate of eight rubles per hour. Assistants performed laboratory work with students and carried on their own scientific research.

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6. Teaching Program:

- a. The curriculum at KhETI required that day school students attend for five years and night school students for six years. Each year was divided into two semesters, the fall and spring semesters. The fall semester began on 1 September and lasted until 20 December. Between 10 and 20 December Polukursaviye Ispitaniye (mid-year examinations) were held. The spring semester lasted from 5 January to 10 June. From 20 May to 10 June the Kursaviye Ispitaniye (final examinations) were held. The students were graded on the final examinations as Otl (Otlichno - excellent), Khor (Khorosho - good), Ud (Udovletvoritel'no - satisfactory), or Neud (Neudovletvoritel'no - not satisfactory). Those students whose work was graded Neud in the final examinations were permitted to take a second supplementary test at the beginning of the fall semester. Attendance at all classes was obligatory and every professor kept a class attendance record in which he recorded the daily attendance of each student. Students could be excused by the professor from taking the mid-year examinations in December if they made above average progress throughout the fall semester.
- b. The courses taught at KhETI during the first three years were theoretical and of a general technical nature and were required for all students. After the third year each student was required to work during the summer months at a factory. This practical training was usually given at KhETZ, the Kharkov Elektromontazh workshop, or the local streetcar workshop and was called Pervaya Proizvodstvennaya Praktika (First Creative Practice). During the fourth year a student was taught only special subjects of the department that he elected to join. In the Department of Electromotor Drive at KhETI the students in the second half of the fourth year, the spring semester, were required to further specialize by choosing courses in one of the following four fields: Blast Furnaces and Steel Plants (including open hearth), Machine Plants, Paper Mills and Other Miscellaneous Plants. At the end of the fourth year the student selected the theme for his thesis and then spent the summer months working in a factory in a field allied to his thesis. This required summer employment was called Vtoraya Proizvodstvennaya Praktika (Second Creative Practice). In the last, or fifth year, the student devoted all of his time to research, the writing of his thesis and making preparations for giving his oral dissertation.
- c. At the end of the fifth year in June, or if extra time was needed, at the end of the fall semester in December, he submitted his thesis and gave an oral dissertation to a special commission. Sometimes students, for one reason or another, did not do this until as long as one and one-half years after the end of the fifth year. Before the thesis was submitted to the commission, it was checked carefully by one of the students' department professors. The thesis usually included from 12 to 20 drawings and some 200 typed pages of calculations and descriptions.

7. Curriculum:a. First Year:

- | | |
|-------------------------|------------------------|
| (1) Theoretical: | (e) Technical Drawing |
| (a) Physics | (f) Sociology |
| (b) Chemistry | (g) History of the VKP |
| (c) Analytical Geometry | |
| (d) Calculus | |
- (2) Practical:
- (a) Chemical Laboratory
 - (b) Drafting
 - (c) Military Training

b. Second Year:

- (1) Theoretical:

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|------------------------------------|--|
| (a) Technical Mechanics | (e) Introduction to Electrotechnics |
| (b) Electricity and Magnetism | (f) Differential Equations |
| (c) Stress Resistance of Materials | (g) Structural Art |
| (d) Electro-Chemistry | (h) Primary Movers (steam, water and combustion) |

- (2) Practical (laboratory work):
- (a) Stress Resistance of Materials
 - (b) Electro-Chemistry

c. Third Year:

- (1) Theoretical:
- | | |
|-----------------------------------|---|
| (a) Analysis of the Vector Theory | (e) Electrical Measurements |
| (b) Theory of Alternating Current | (f) Radio Technology |
| (c) Electrical Machinery | (g) Electrical Lighting |
| (d) Telephones and Telegraphy | (h) Electrical Commutating and Protective Devices |
- (2) Practical (laboratory work):
- | | |
|---------------------------------------|-----------------------------|
| (a) Design of DC Electrical Machinery | (c) Electrical Machinery |
| (b) Design of AC Electrical Machinery | (d) Electrical Measurements |
- (3) Summer employment at an electrical plant or repair shop.

d. Fourth Year (Department of Electromotor Drive only):

- (1) Theoretical (fall semester):
- | | |
|---|--|
| (a) Electrical Power Stations and Substations | (d) Electrification of Industry |
| (b) Electrical Transmission Lines | (e) Electrical Cranes and Cargo Handling Machinery |
| (c) Electrical Networks | |
- (2) Theoretical, spring semester (choice of one of the following):
- (a) Blast Furnaces and Steel Plants:
 - (1) Mechanical and Electrical Characteristics of Electrical Motors
 - (2) Electrical Connectors and Relays
 - (3) Equipment of Coke and Sintering Plants
 - (4) Blast Furnace Equipment
 - (5) Open Hearth and Converter Equipment
 - (6) Steel Mill Main Drives
 - (7) Steel Mill Auxiliary Drives
 - (b) Machine Plants
 - (c) Paper Mills
 - (d) Other Miscellaneous Plants
- (3) Practical (laboratory work):
- (a) Design of Electrical Networks
 - (b) Design of Electrical Substations
- (4) Summer employment in work allied to a student's selected theme for his thesis.

e. Fifth Year: Research and writing of a thesis under the direction of a department professor.8. Student Organization:

- a. Students enrolling at KhETI were divided and organized into groups of from 40 to 50 students each. Each group elected its own Gruppovod (leader of the group) who represented the individual members in all matters, particularly in dealing with the KhETI administration. Each group was assigned a number which was retained until the fourth year, when these initial groups were dissolved. One of the primary reasons for the existence of these numbered groups was to facilitate the scheduling of classes and the preparation of special notices and schedules that appeared on KhETI bulletin boards. That way it was possible to post a notice simply announcing that groups 382 and 403 would on a certain day during a certain hour be expected to appear in the auditorium instead of their regular classrooms.

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- b. During the first three years at KhETI some students in each group dropped out for any one of many reasons, including expulsion for unsatisfactory progress in their studies. Therefore, by the spring semester of the third year each group only had from 15 to 20 members. In the fall semester of the fourth year these initial groups were dissolved and the students reorganized into new groups, according to their chosen specialty. These departmental groups were made up of from 80 to 100 students each. Up to 1941 at least half of the students in their fourth year at KhETI elected to complete their studies under the Department of Electromotor Drive, specializing in Blast Furnaces and Steel Plants. The reason for this was that at that time there was much activity in that field and it held many interesting electrical problems.
- c. During day school of the first four years at KhETI the program required that students attend three lectures and one laboratory class, each being of two hours duration, each day, six days a week. During the fifth year they worked on their thesis preparation and research in special drafting rooms from 8:00 am to 4:00 pm. Those students who wished to do additional work were allowed to remain in these drafting rooms until 10:00 pm. Two or three times weekly professors came there in the evenings for consultation purposes.

9. Miscellaneous:

- a. Generally speaking students who attended KhETI had a difficult time of it financially. It was bad enough prior to 1939 when no tuition was charged, after 1939 many were forced to drop out of school. The most hard pressed were those who were being supported by their parents. Most students in 1941 had to pay a tuition of 350 rubles per semester, or 700 rubles per year. This, as a rule, was higher than the tuition of most Soviet universities. Those who were excused from paying tuition were students whose parents were on the faculty and the Stipendii (students whose tuition and expenses were paid by the government).
- b. About 30% of the total student body at KhETI were Stipendii, who were either Party members, children of Party members or outstanding middle school pupils. There were comparatively few of the latter. The Party members were generally a problem in that they expected to be given special privileges and be treated with kid gloves. Many of them often attempted, and sometimes succeeded, into coercing the professors at KhETI into giving them passing marks when they did not deserve them.
- c. In the KhETI building was a student cafeteria, where they could eat good meals for a very low cost. There was also a dormitory close to KhETI where out-of-town students were given free lodgings. This dormitory was called Studencheskoye Obschezhitie and accommodated male and female students not only from KhETI but also from the various other schools in Kharkov. It was a large building, over a block long and eight stories high, which had halls running for the full length of each story. On each side of the halls were rooms, each housing six students. These student accommodations, although free and close to KhETI, were not satisfactory due to the crowded conditions and many distractions.

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ENCLOSURE (A): Structural Sketch of KhETI

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831.7	224N

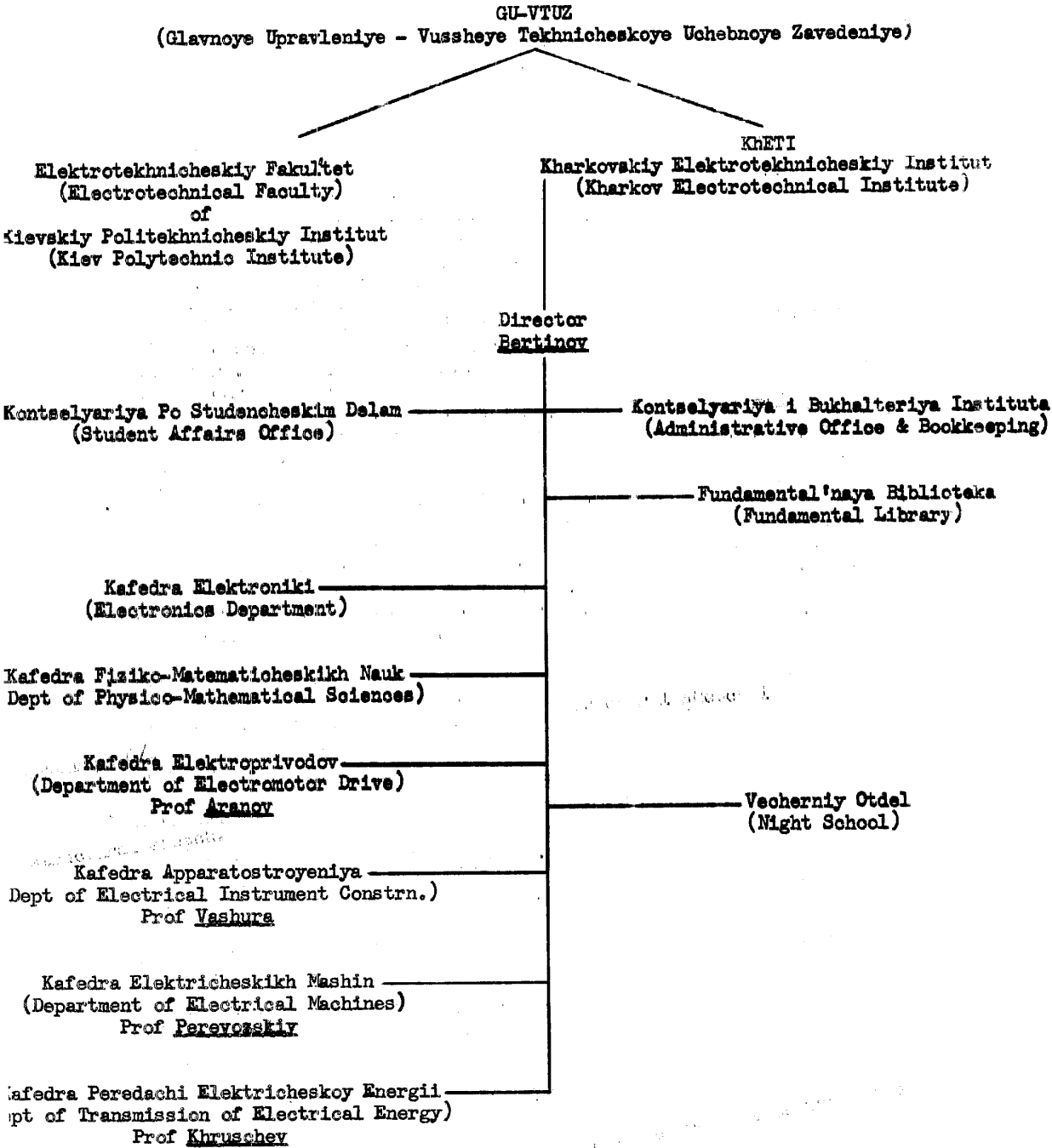
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ENCLOSURE (A)

6. Organizational Structure:



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